http://www.mdweb-project.org/

User Manual
MDweb version 2010

Version: 1.0

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Contents of the user manual

- **Configuration** – Configuration of the MDweb tool
- **Administration** – Managing users and user rights
- **Editing Metadata** – Editing metadata records
- **Searching** – Data searches with MDweb

Note: This User Manual assumes that MDweb has already been installed and deployed. If not, please refer to the Quick Start Installation Guide:

http://www.mdweb-project.org/files/documentation/

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Introduction to MDweb

Nowadays, most environmental applications are created within a framework of projects that involve varied actors, ranging from the citizen to the scientist to the administrator. In such a context, the sharing, access and distribution of information becomes essential.

A free tool for cataloging and locating free and normalized information

MDweb, created for just this context, is a tool, accessible over the web, for cataloging and locating resources (data, documents and services). It is based on current metadata (ISO 19115, 19119) and communication (OGC's CSW) standards and conforms to rules for implementing metadata and the associated discovery services of the INSPIRE directives.

Enrichment of the catalogs by the domain's expertise

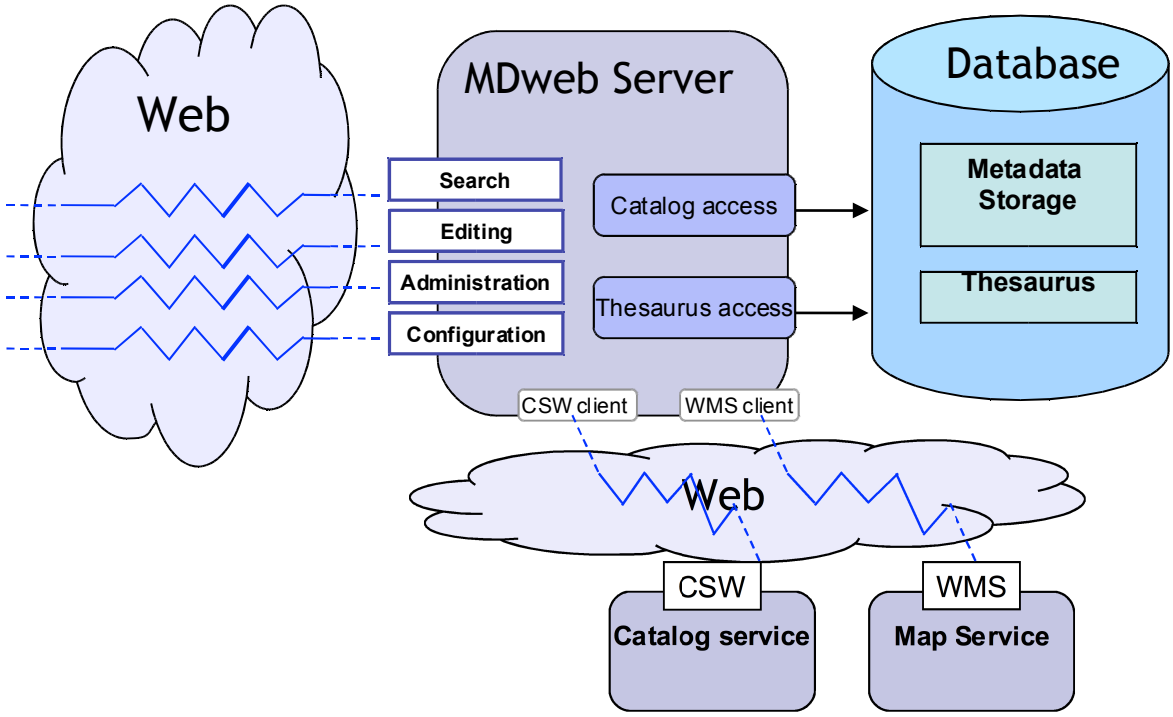
One of MDweb's originalities is to include the spatial and semantic aspect in the description of and search for resources. This is achieved by the use of thematic repositories (thesauri) and spatial repositories (geographic objects of interest) specific to the target application.

An entry point for spatial data infrastructures

In the framework of emerging spatial data infrastructures at the national (geo-catalog and geo-portal), European and international levels, all of which require collaboration and transparent communications between tools and catalogs, the MDweb project's goal is to offer interoperable catalogs and services designed to use them. In this document, we describe the main technical features of MDweb and show you its correct usage.

General architecture of MDweb

MDweb users can access four major modules: Configuration, Administration, Metadata Editing, Search.



Metadata records as well as thesauri are stored in the database associated with the MDweb server.

Metadata and thesaurus keywords are queried via an intermediate web service. MDweb includes a cataloging web service (CSW) as well as a thesaurus service.

Since the cataloging web service conforms to OGC's CSW specifications, the metadata stored in the MDweb database is accessible to any software that conforms to this specification. The resources catalogued in MDweb are accessible via the web.

Similarly, MDweb includes a client to query cataloging services. This allows it to query a large number of remote cataloging services. This client is compatible with ISO 19115, Dublin Core metadata and also with the CSW service specifications.

MDweb thus proves to be a powerful tool for searching and distributing catalogued resources.

Configuration

This part describes the *Configure* module. Access to this module is limited to *Administrator* or *Configurator* users only.

The *Configure* module is used to configure various general aspects of MDweb, including its search module. It also allows configuration of its web services (Cataloging and Thesauri) and of access to queried web services.

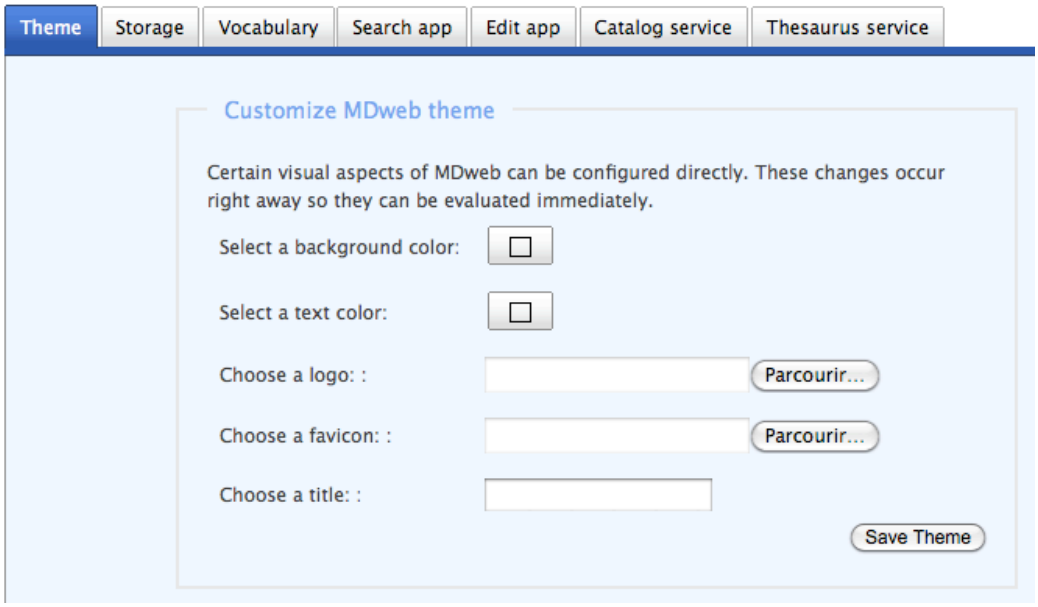
- Log in as a *Configurator* or *Administrator* user.
- In the top bar, click on *Module*, then on *Configure*.

You then have access to the *Configure* module. It consists of 7 tabs, each of which can be used to configure a specific aspect of MDweb.

1 *Theme* tab

Use the *Theme* tab to customize the appearance of the top and bottom bars which are displayed on every MDweb screen.

The title of the application, its logo, the text color and background colors can be customized.



- *Select a background color* allows you to choose the background color of the bars.
- *Select a text color* allows you to choose the color of the text in the bars.
- *Choose a logo* allows you to include a logo image to be displayed in the left corner of the MDweb bar. It will replace the MDweb logo displayed by default.

The image's size should be limited to 200 pixels wide and 60 pixels high. If the image used is bigger, it will be automatically reduced.

- *Choose a favicon* allows you to choose a favicon specific to the user's sites. The selected image should conform to the same size restrictions as the logo image (above).

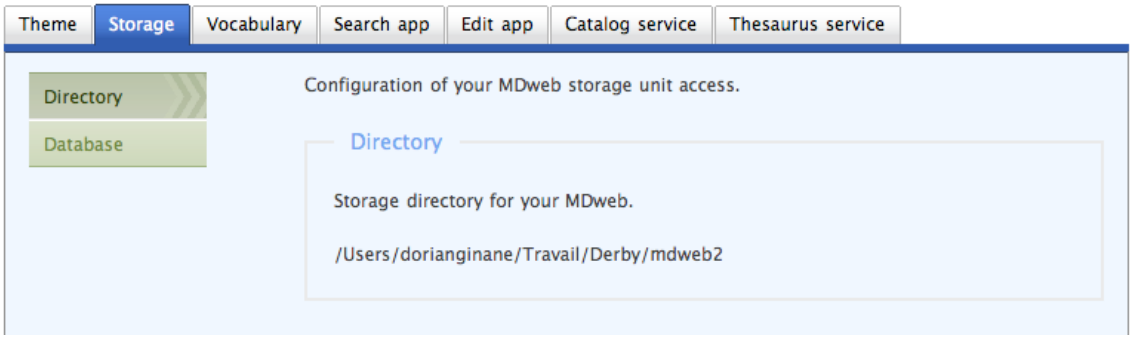
- *Choose a title* allows you to change the text displayed beside the logo in the top bar. By default, this text is 'MDweb'.

Once the changes have been made to your satisfaction, click on *Save theme*. The changes take effect immediately. You can thus easily experiment with different parameters to arrive at a suitable configuration.

2 *Storage* tab

During the installation of MDweb, a directory for storage as well as a database were created.

Use this tab to display the path to your storage directory and the connection parameters for your MDweb database.



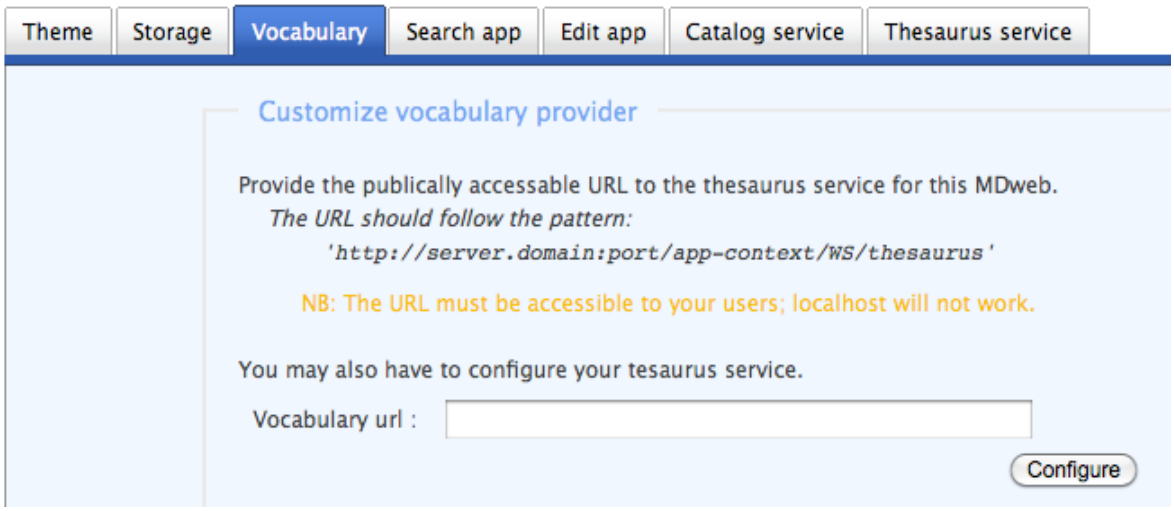
- *Directory* shows you the path to your storage directory.

- *Database* shows you the database's connection parameters.

These parameters are not modifiable. They are defined once and for all at the time of installation of MDweb. To modify them, MDweb will have to be reinstalled.

3 *Vocabulary* tab

Use the *Vocabulary* tab to connect the search and editing applications to a thesaurus web service so that the keywords in the thesaurus can be used.



You have to provide the address of the thesaurus web service that will be queried.

You can:

- Connect to a local MDweb thesaurus service if you have configured it.

> Refer to the *Configuration* part, section *8 Thesaurus Service tab* for details on creating a thesaurus service with MDweb.

- Connect to a remote thesaurus service.

The URL should have the following form:

http:///[domain-name]:[port]/[context]/WS/thesaurus

For example: http://demo.geomatys.com/mdweb-thesaurus/WS/thesaurus

> The URL specified should be public and accessible via the web.

4 *Search application* tab

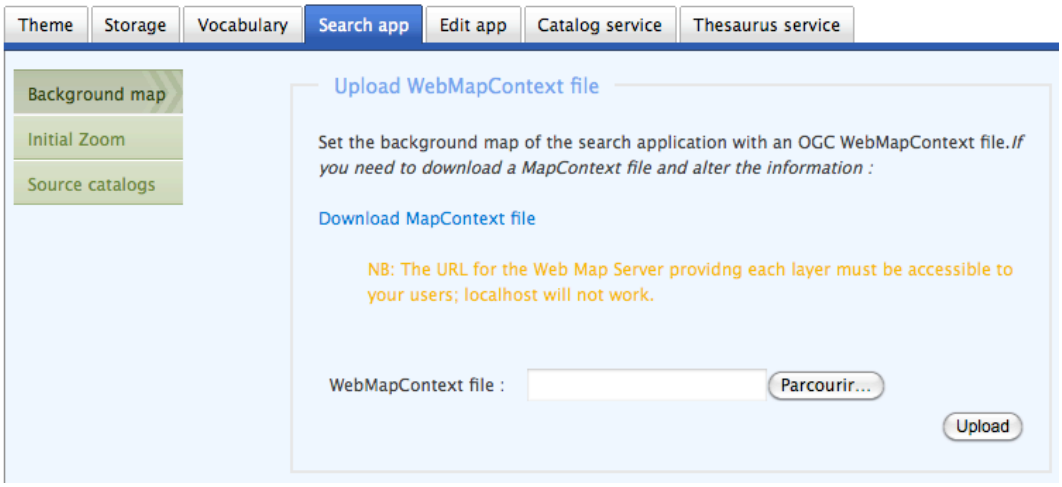
Use this tab to configure the search module's appearance and its default parameters. Also, use it to set the maximum extents of the search zone, configure the displayed layers and their styles.

The *Search application* tab includes three sub-tabs on the left.

4.1 Background map

Use the *Background Map* sub-tab to specify the default background map to use in the cartographic interface of the *Search* module.

The background map is defined in an XML file conforming to the OGC Web Map Context standard (http://www.opengeospatial.org/standards/wmc). This file will contain the layers that will be accessible in the cartographic interface, the WMS services that will be queried and the default layer properties.



- If you do not have your own Web Map Context file, you can download an existing file and modify it.
- Click on *Download Map Context file* to download a file, then modify it.

For help in modifying the file, consult the Web Map Context specifications (http://www.opengeospatial.org/standards/wmc).

A brief tutorial is also included in this document's annex.

- Once the file is modified, save it.
- Navigate to it using the *Browse* button.
- Click on *Upload*.

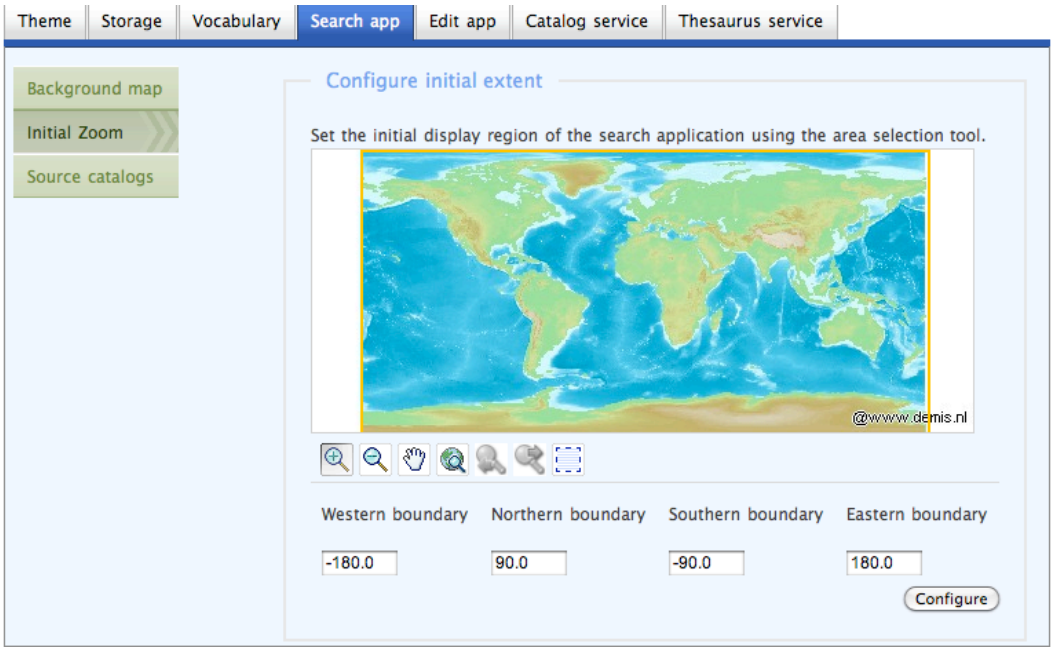
The background map will be stored and used the next time a user connects to the search module.

4.2 Initial Zoom

Use the *Initial Zoom* sub-tab to set the default zoom for the *Search* module's cartographic interface.

> The user can always conduct searches on a zone bigger than that specified by the initial zoom setting. The search zone is limited to the maximum spatial extents defined in the Web Map Context.

- The initial zoom is set by clicking the window zoom button and drawing the chosen area on the map.



- For more precise positioning, use the available display icons for navigating in the map window:
  - Zoom in and out
  - Pan (hand icon)
  - Zoom all
  - Previous/next view
- You can also enter the coordinates of the extent directly, expressed in decimal degrees (WGS84), into these four fields: *Western boundary*, *Eastern boundary*, *Southern boundary,* and *Northern boundary.*
- Once the initial view is set to your liking, click on *Configure.*

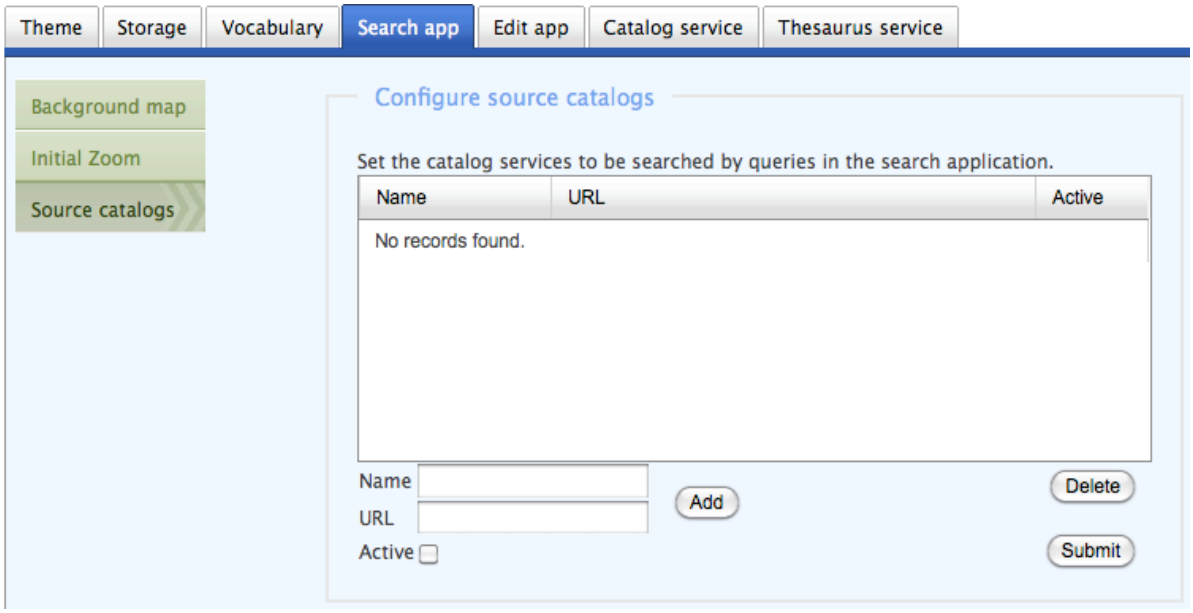
The initial zoom will be saved and active; the next time a user connects to the search module, he will see the new initial view.

4.3 Source Catalog

Use the *Source Catalog* sub-tab to enter the addresses of cataloging services (CS-W) which will be offered by default as well as those that shall be active.

The active cataloging services will be those requested by default during a *Quick search*.

All catalogs (active and inactive) will be included by default in the list of queryable catalogs in the *Who?* tab of *Advanced Search* (see *Searching* part, section *3.4 Who?*).



- To add a new CS-W catalog:

  - *Name*: The name that will appear in the catalog list in the *Who?* tab (see *Searching* part, section *3.4 Who?*).

  - *URL*: The URL of the cataloging service (CS-W). For example:

    http://loa.geomatys.com:9180/naturesdi-plus/WS/csw

The URL syntax should stop before the question mark (?) and should not include request parameters.

If no catalog is defined here, a search launched from MDweb's *Search* module will, by default, query MDweb's internal catalog.

The URL specified should be public and accessible via the web.

  - *Active*: The catalog will be included in the list of default catalogs queried during a *Quick search* if the user does not modify the queried-catalogs list in *Advanced search.*

  - Click on *Add.*

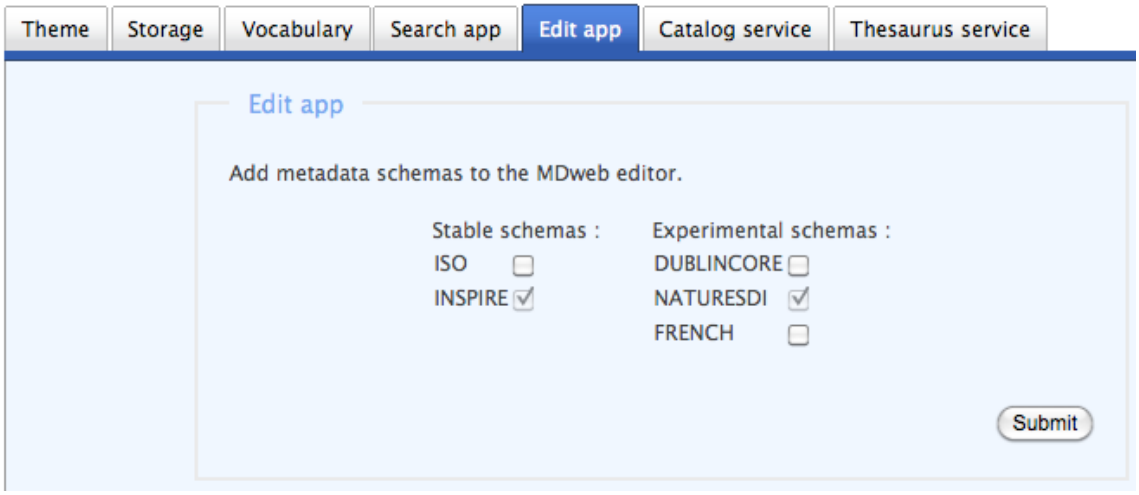
- To delete a catalog:
  - Select it.
  - And click on *Delete*.
- All changes made have to be saved using the *Submit* button.

The list will be saved and modified the next time a user accesses the *Search* module.

5 *Edit application* tab

Use the *Edit App* tab to add metadata profiles which will be made available to authors during metadata entry. These profiles will be available in the *Profiles* area of the opening screen of the *Edit* module.

A description of the various available profiles can be found in the Annex.



- Check the check-boxes for the profiles you want to select.
- Click on *Submit.*

Currently, a profile once activated cannot be deactivated.

The activated profiles will be saved and available the next time a user connects to the *Edit* module.

6 *Catalog service* tab

Use the *Catalog Service* tab to provide identifying information on the MDweb cataloging service provider.

The ServiceMetadata file contains general descriptive information on the service owner and the service's capabilities. This XML file corresponds to the response that will be

returned by your service for a GetCapabilities request. (The GetCapabilities request is used to describe the capabilities of a service in a standardized way.)

To implement a ServiceMetadata file describing your service:

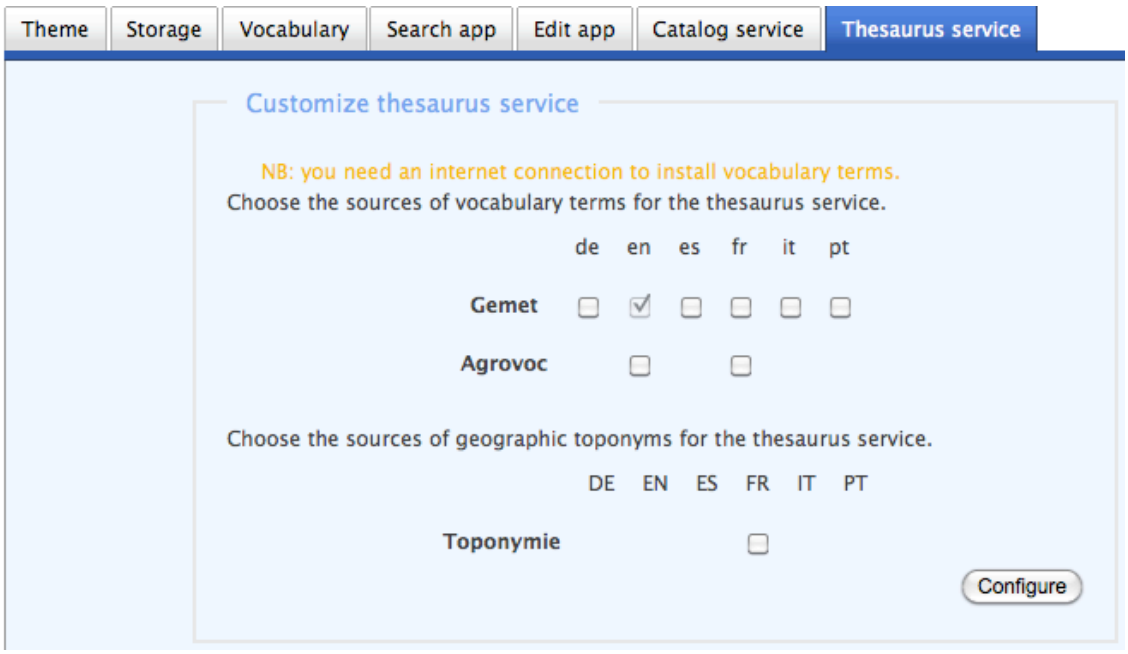
- Download the XML skeleton file (*Download skeleton file*).
- Open this file.
- Modify the information located between the <ows:ServiceProvider> tags.
- Select this new file by navigating to it using the *Browse* button.
- Click on *Upload* to upload the file and save the configuration.

The modifications made will only apply when the application is restarted.

To restart the domain, refer to *Annex A: Managing a Glassfish server* in the MDweb Quick Start guide.

7 *Thesaurus service* tab

Use the *Thesaurus service* tab to add one or more thesauri to the MDweb database. The terms contained in the added thesauri will be the terms offered during searches or editing of a keyword.



- Select the thesaurus/thesauri and the languages you want to add.
- Click on *Configure*.

For selected thesauri to be available during entry of keywords (*Search* and *Edit* modules), the address of the thesaurus web service has to be entered in the *Vocabulary* tab with a URL of the form:

http://[your-domain-name]:[port]/[name-of-deployed-application]/WS/thesaurus

An Internet connection is required for the thesauri to be added.

Administration

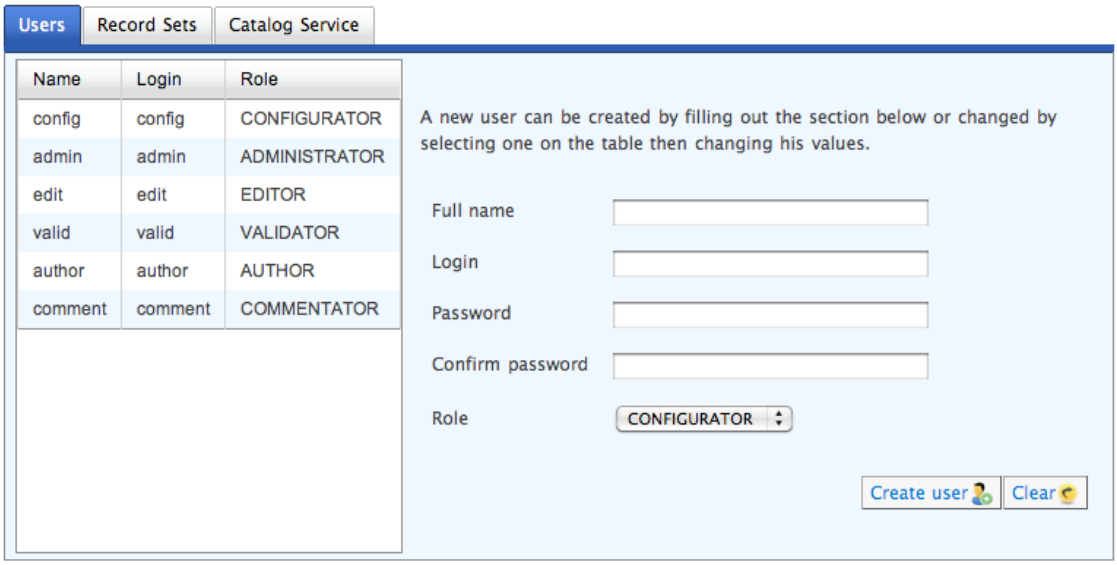
Use the *Administration* module to mange user rights, metadata sets and the availability of edited metadata.

Only *Administrator* or *Configurator* users can access this module.

- Log in as an *administrator* or *configurator*.
- In the upper bar, click on *Module*, then on *Administer*.

1 *User* tab

Use the *User* tab to manage users and their rights.



The left part of the screen lists existing users and their roles; on the right is the form for creating or deleting a user.

1.1 Creating a user

- Fill in the fields:
  - *Full name*: This is the name that will appear in the upper bar when the user is logged in.
  - *Login*: Log-in username for connecting to MDweb.
  - *Password* and *Confirm Password*: Password for access to MDweb.
- Select the user's role.
- Click on *Create User*.

1.2 The different user roles

All MDweb users (whether logged in or not) have access to all the features of the *Search* module.

Logged-in users have access to other MDweb features, depending on the user role assigned to them.

Configurator: This user has access to the *Configure* module and *Administration*. He can customize MDweb's interface and the location for storing data. He can also configure access to CS-W cataloging services and thesaurus services.

The Configurator user does not have access to the *Edit* module and thus cannot create metadata records.

Administrator: This user has access to all MDweb modules. He is a super-user: he can do everything within MDweb.

The first user created with MDweb is a *Configurator*. One of his first acts should be to create one or more *Administrator(s)*.

Editor: An editor user has access to the *Search* module and to the entire *Edit* module. Thus, he can create new metadata records, validate them and publish them in a record set.

Validator: The validator user can edit and validate records, but, unlike the editor, he cannot publish the validated records in a record set.

Author: He can edit new records but can neither validate nor publish them.

Commentator: The commentator user can access the *Edit* module. He can access records irrespective of whether they have been published, validated or not. He has only read rights. He cannot modify records but can attach comments to them.

1.3 Deleting a user

- Select the user.
- Click on *Delete User.*

1.4 Modifying user parameters

- Select the user.
- Modify the fields in the form on the right.
- Click on *Save change.*

You cannot modify a user's log-in username.

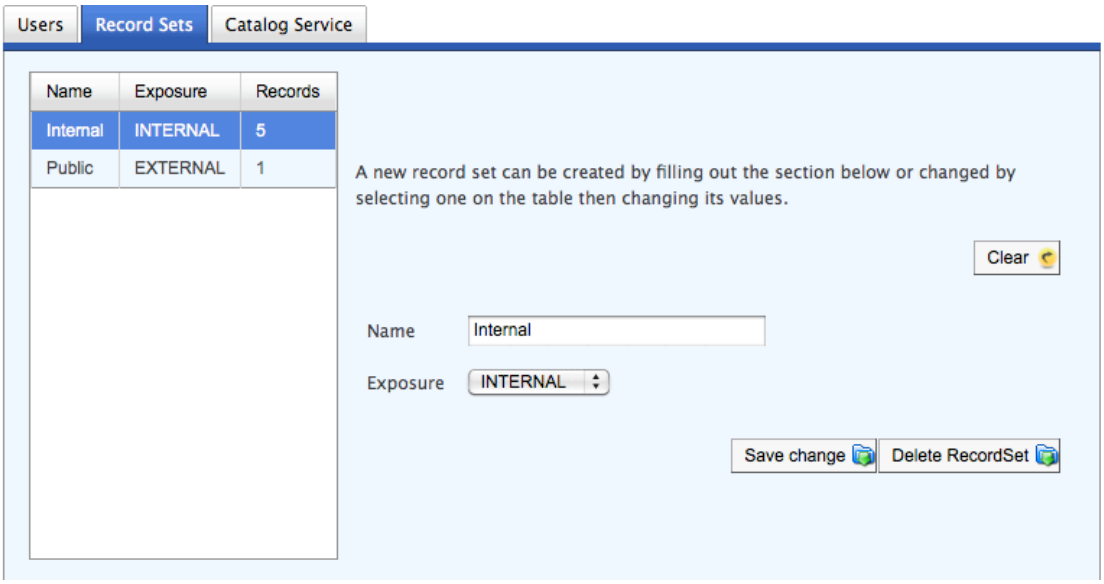
Any changes made will be take effect immediately.

2 *Record Sets* tab

Use the *Record Sets* tab to manage record sets. Each new metadata record created belongs to a record set.

Managing record sets includes the ability to:

- Define *External* record sets which will be accessible via the web using the CS-W cataloging service once they are published and indexed. The metadata records of these record sets will then will be disseminated and accessible over the web.
- Define *Internal* record sets which will be accessible only by users created in MDweb. These type of record sets can be useful for storing records that are being prepared, i.e., ones that are not yet ready to be made available generally.



The left part of the window lists existing record sets; on the right is the form for creating or modifying them.

2.1 *Creating a record set*

- Fill in the fields:
  - *Name*: The name of the record set.
  - *Exposure*: External (access via the web cataloging service) or Internal.
- Click on *Create RecordSet.*

An *Internal* catalog allows an *Administrator* to make available a certain number of templates that users can use to edit data.

2.2 Deleting a record set

Before a record set can be deleted, its contents, i.e., all the records in it, have to be deleted from the *Edit* module.

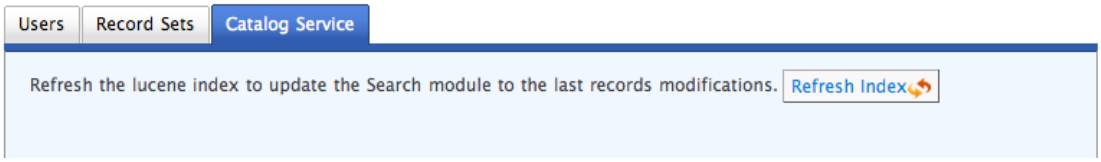
- Select the record set.
- Click on *Delete RecordSet.*

2.3 Modifying a record set

- Click on the record set.
- Modify the fields.
- Click on *Save change.*

Any changes made take effect immediately.

3 Catalog Service tab



Click on the *Refresh index* button to refresh the Lucerne index of the CS-W cataloging service which is used to distribute your MDweb application's metadata records.

If the catalog index is not refreshed, records validated and published since the last refresh will not be searchable from the *Search* module.

The time taken to refresh the index depends on the number of published records. The greater the number of records, the longer the indexing will take.

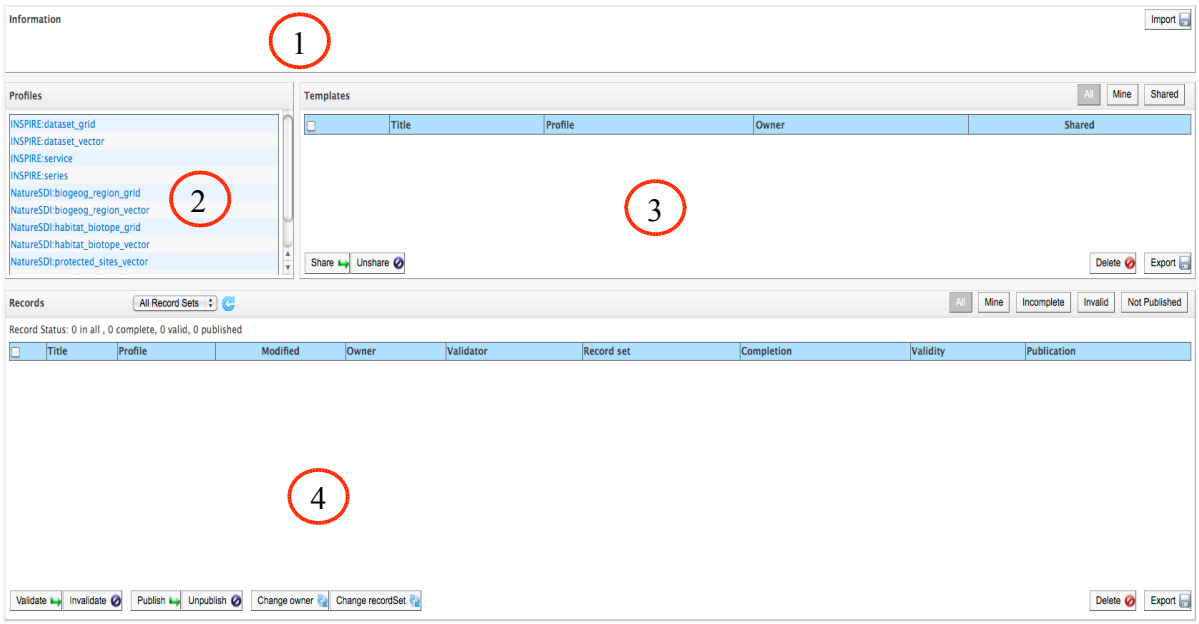
Editing metadata

The *Edit* module allows metadata records to be edited, published, validated, imported or exported. All authenticated users have access to it except *Configurators*. However, some types of users will have restricted rights.

The *Edit* module is divided into three major parts:

- The opening screen where you can manage metadata profiles, records and record templates (section 1, below).
- The edit form where you can enter information into records and templates (section 2).
- The screen for importing records (section 3).

1 *Edit* module opening page



This opening page can be divided into four areas:

- Information area (1)
- Metadata profiles (2)
- Record templates (3)
- Records (4)

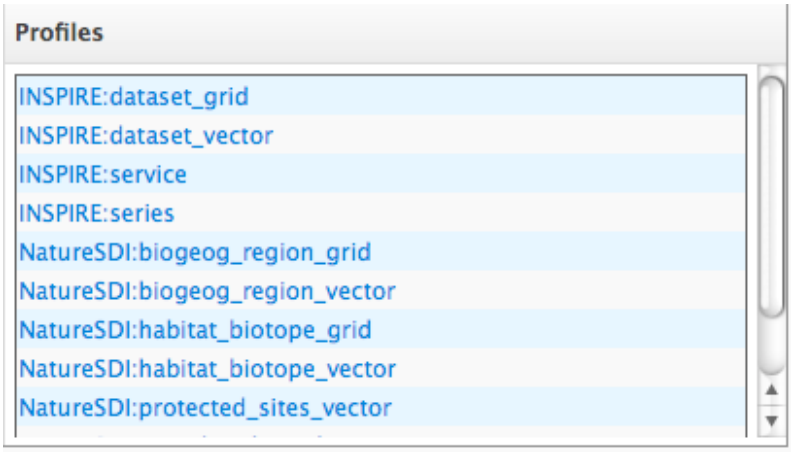
1.1 Information area

Results and error messages are displayed on the left side of the information area.

On the right side is located the *Import* button 

which allows you to go to the page for importing records (section 3).

1.2 Metadata profiles area



The profiles correspond to specific subsets of elements that the user will have to fill in while editing a record or metadata template.

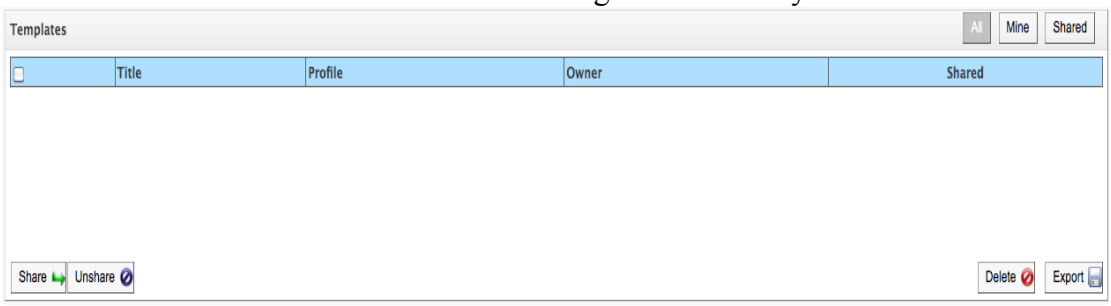
Click on a profile and an empty metadata record corresponding to that profile will be displayed.

To enter the data into the record, refer to section *2. Edit form*, below.

1.3 Record templates area

This box displays record templates. These are metadata records with predefined values already filled in for certain elements (e.g., Organization name).

The creation and subsequent use of a records template to enter a new record saves substantial time during metadata entry.



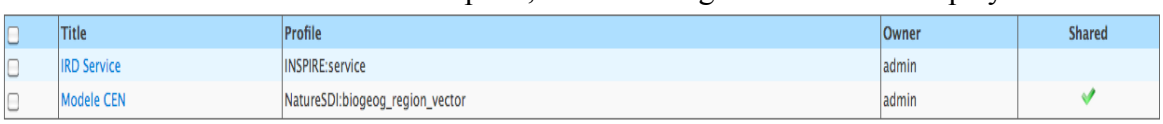
To fill in a new record using a template:

- Click on the title of an existing template.
- Complete your record (see section *2. Edit form*, below.)

The creation of templates is also covered in section *2. Edit form,* below.

Information displayed:

For each template, the following information is displayed:



- *Title*: name of the template
- *Profile*: Metadata profile on which the template is based.

- *Owner*: The user who created this template.
- *Shared*: Users who are *Administrators* or *Editors* can choose to share record templates with all other users. Such templates are marked with a check-mark in the *Shared* column.

1.3.1 Buttons in the *Templates* area

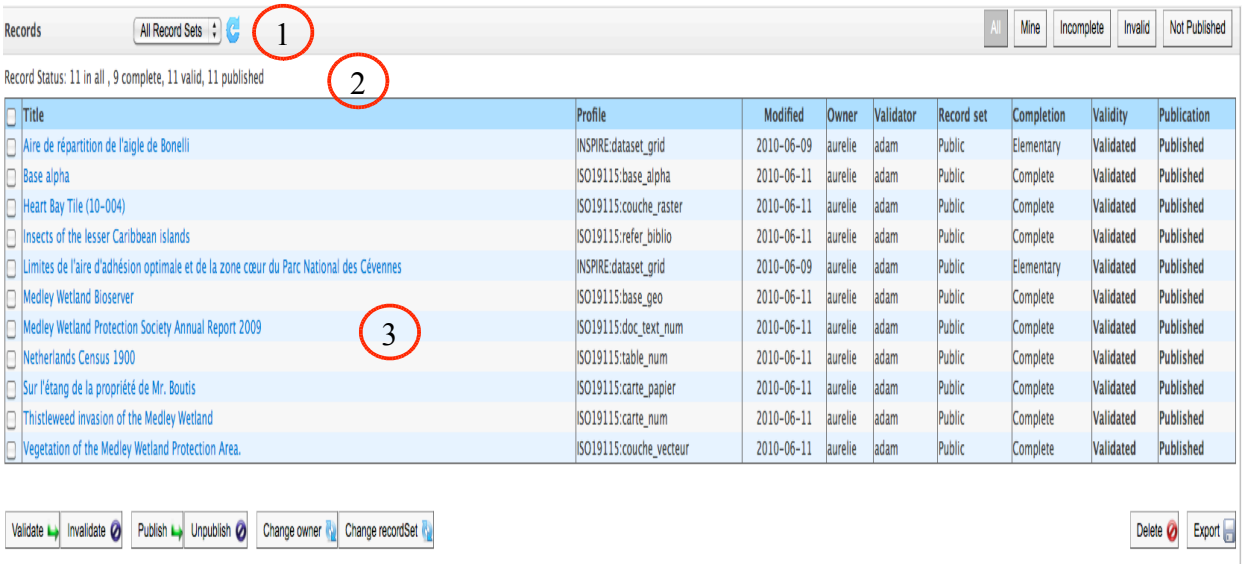
- Use the *Export* button Export to export the template in XML format.

> The *Export* button is not functional in MDweb version 2010.

- Use the *Delete* Delete button to delete a template.
- Use the *Share* / *Unshare* Share Unshare button if you are an *Administrator* to share / Unshare a template with other users.

1.4 The Records area

Stored metadata records are displayed in this part of the screen.



This rectangular area is itself divided into four parts:

- Managing the display of records (1)
- Summary of records in the record sets (2)
- Records in the record sets (3)
- Managing records (publication, export, etc.) (4)

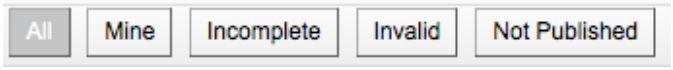
1.4.1 Display of records

Records displayed in the records area can be filtered using the bar at the top of the area.

- On the left:

  - Select the record set to display from the drop-down list.
  - Click on the *Refresh* icon. 

- On the right, the filters that can be used:

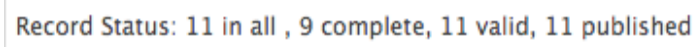


  - *All*: Display all records.
  - *My Records*: Display only those records created by the user.
  - *Incomplete*: Display those records which are not fully complete.

> For a record to be complete, all its fields, including optional fields, must be filled in.

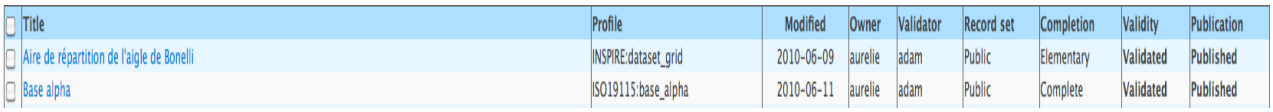
  - *Unvalidated*: Display those record which are not validated.
  - *Invisible*: Display those records which are not published.

1.4.2 Number and status of existing records



The number of total records in the record set as well as the number of completed, validated and published records is displayed in this area.

1.4.3 Displayed records



Title	Profile	Modified	Owner	Validator	Record set	Completion	Validity	Publication
Aire de répartition de l'aigle de Bonelli	INSPIRE:dataset_grid	2010-06-09	aurelie	adam	Public	Elementary	Validated	Published
Base alpha	ISO19115:base_alpha	2010-06-11	aurelie	adam	Public	Complete	Validated	Published

For each record, the following information is displayed:

- *Title*: Title of the record.
- *Profile*: Metadata profile corresponding to the record.
- *Modified*: Last modification date.
- *Owner*: User who created this record.
- *Validator*: User who validated this record.

- *Record set*: Corresponding record set.
- *Completion*: Completion status of the record.
- *Validity:* Validity status.
- *Publication*: Publication status.

Click on the title of a record to open it. You can then modify or complete it. (See below, section *2. Edit form*.)

1.4.4 Managing records

On the left of the *Records* area:

- *Validate*: Validate the record's contents so that it be published.
- *Invalidate*: Reverse the validation of the contents of a record, i.e., indicate that the contents still need modification.
- *Publish*: Make selected records visible in and queryable from the search interface.

A record has to be validated before it can be published.

For a record to appear in the Search module, the MDweb administrator has to refresh the Lucerne index (see *Administration* part, section *3. Catalog Service tab*).

- *Hide*: Make a record unavailable in and unqueryable from the Search interface.
- *Change Owner*: Change the owner of the selected record.
- *Change Record Set*: Move the record to a different record set.

On the right of the *Records* area:

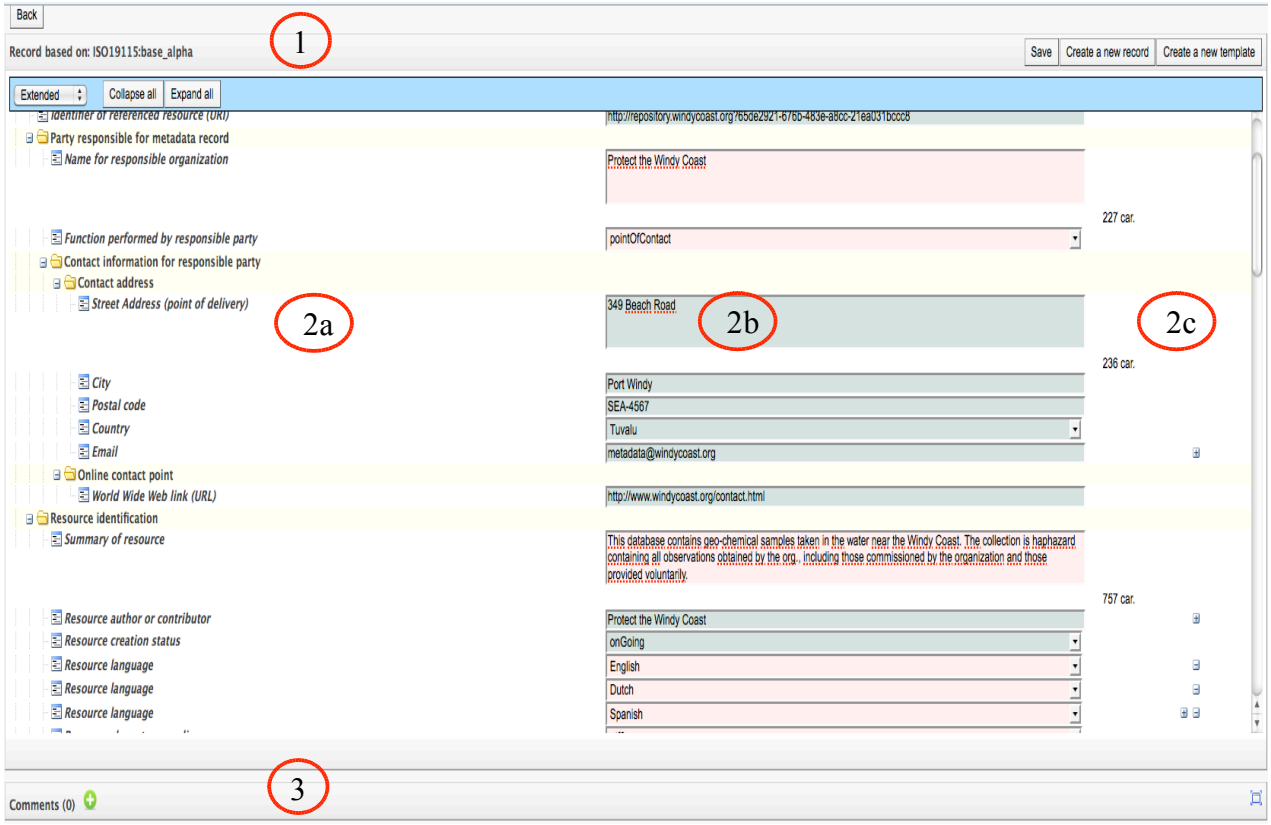
- *Export*: Export the record in XML ISO 19139 (or Dublin Core) format.
- *Delete*: Delete the selected record.

2 The Edit form

Use the *Back* button 

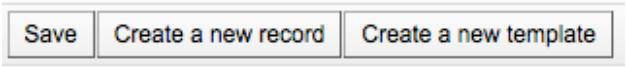
to return to the Edit Records opening screen from the Edit form.

This form is divided into three major areas:

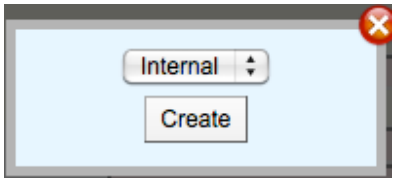


- The upper bar (1)
- The entry form (2)
- The comments bar (3)

2.1 The upper bar

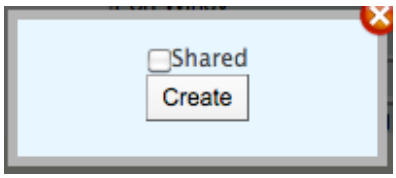


- *Create a new record*: Click on this button to save the record that you have just edited. (You can always modify it later.)
  - A dialogue box will open and you will be asked to select the record set in which you want to save the record.



- *Create a new template*: Use this button to create a template with

some elements already filled in.



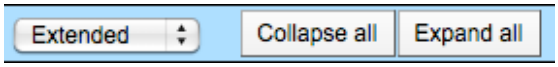
- After you click on the *Create a new template* button, a dialogue box appears if you are an *Administrator* or an *Editor*. You can then choose to share the template with other authenticated MDweb users.

The *Title* field should mandatorily be filled in before records and templates are saved.

2.2 The entry form

2.2.1 Managing the display

Three views are available for each record: *Elementary*, *Extended* and *Complete*. The Elementary view only displays those elements that are mandatory for the concerned metadata profile.



- Use the drop-down list on the left to select one of the three views.
- *Collapse all* corresponds to the *Elementary* view.
- *Expand all* corresponds to the *Complete* view.

2.2.2 The form

The form is divided into three parts:

- On the left (2a) are the names of the fields to be filled in
- In the centre (2b) are the entry boxes to fill in the values
- On the right (2c) is the area for multiple occurrences of metadata elements

2.2.2.1 Field names

Field names are displayed according to the ISO 19139 standard.

The hierarchy between elements corresponds to the path from the root element to the concerned element via different classes

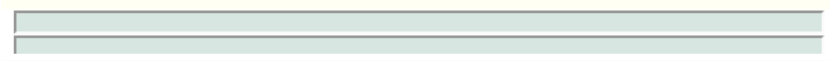
of the ISO 19115 standard.

2.2.2.2 Entry boxes

Entry boxes displayed in red are of those fields that are mandatory for the chosen profile. These fields *have* to be filled in.

Mandatory field

Conditional or recommended optional fields are shown in green.



Recommended fields

Fully optional fields are shown in white; the record is valid for the chosen profile even if these fields are not filled in.

Optional field

- The *date* fields can be filled in in ISO format (YYYY-MM-DD) by clicking on the *Calendar* icon on the right of the entry box.

- The spatial extent (bounding box) of the resource can be entered using the icon.

Autocompletion of text entries is available for *keyword* fields when a Thesaurus web service has been configured (see *Configuration* part, section *8. Thesaurus Service).*

2.2.2.3 Managing multiple occurrences

In the area on the right side of the form, two icons, and allow new instances of an element to be added. The presence or absence of a plus sign next to an element depends on the multiplicities imposed on the element by the profile being used.

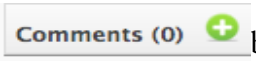
A allows the addition of an instance of a class and thus of all its properties

A allows the addition of an instance of only a property.

To delete an instance, use the appropriate *minus* icon: or

2.3 The comments bar

The comments bar allows a user to leave comments about a metadata record without modifying the record itself. Or, if he has modified the record, to describe the modifications.

- Use the *Add comments* 

button at bottom left to attach a comment to a metadata record.

- Use the *Enlarge* icon  on bottom right to display existing comments.

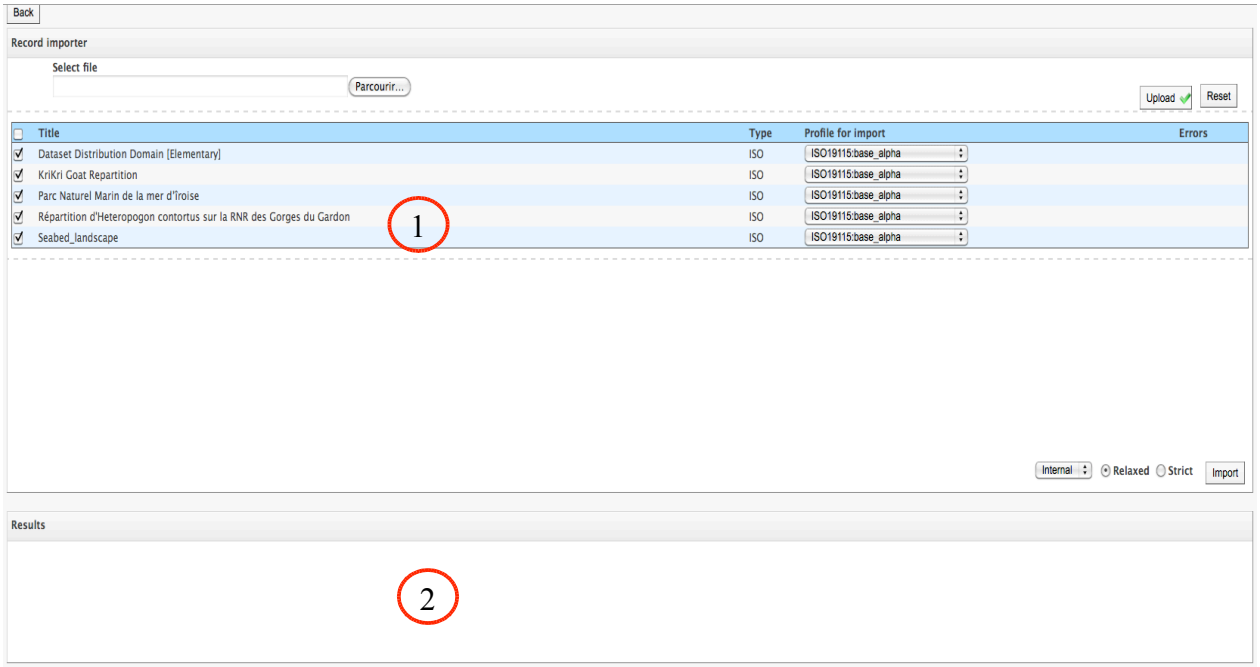
3 Importing records

On clicking the *Import* 

button, you arrive at the Import screen. Use the *Back* button to 

return to the main Edit screen.

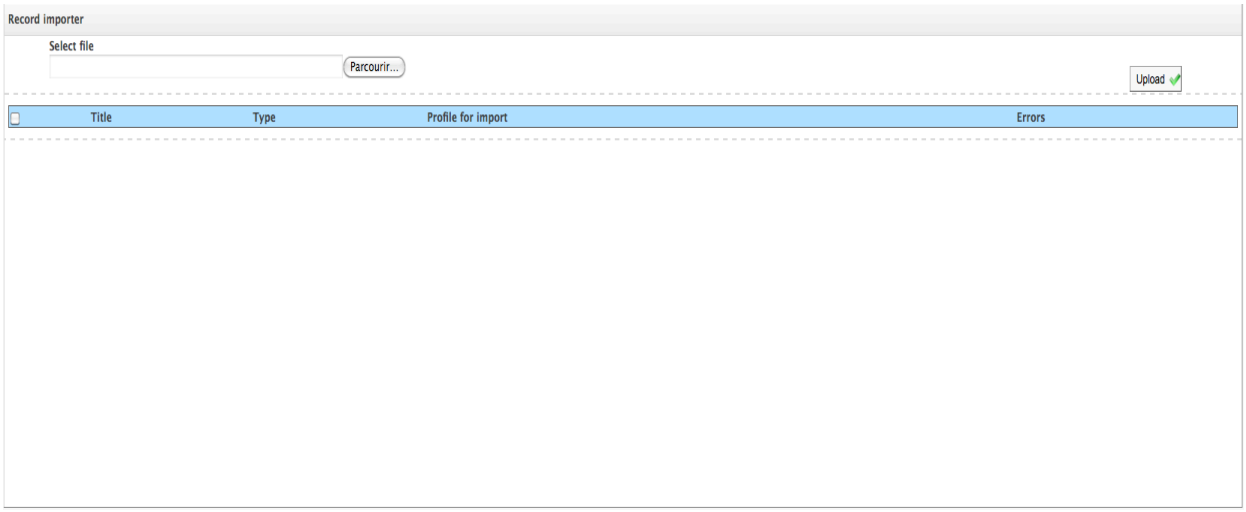
MDweb can import XML records that conform to Dublin Core or to ISO 19115 and to profiles derived from ISO 19115.



This screen is divided into two:

- Importing XML files (1)
- The output area, providing information on the import operation (2)

3.1 Importing XML files



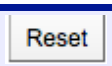
Imported XML records have to conform to the ISO 19139 or Dublin Core standards.

To import a record:

- Click on *Select file.*

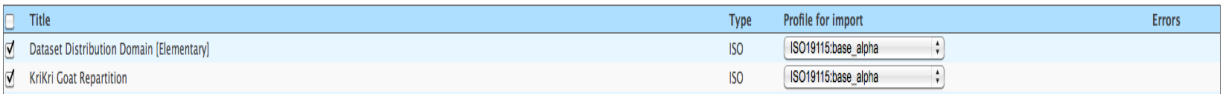
> *You can import zipped files containing several XML records. All imported records should be in the root of the zip file. There should be no directory within the zip file.*

- Select the record you want to import.
- Click on *Upload* 

> *You can reinitialize the selection by clicking on* 

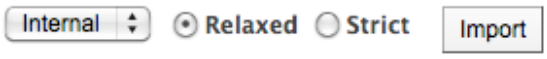
MDweb analyses the record and displays information on the record based on its analysis.

The record then appears in the upper part of the screen.



- *Title* is the name of the record.
- *Type* indicates the standard used for encoding the record.
- *Import profile* allows you to choose the profile to which the imported record should conform. By default, MDweb displays the profile that it has detected. If this is not correct, you can change it.
- *Error* lists possible errors that may occur during the import.

To execute the import operation, select the records you want to import by checking the check-box next to their names on the left. Then at bottom right:



- Use the drop-down list to choose the destination record set into which the record(s) will be added.

- Select whether you want the import to be *Strict* or *Lax* with respect to the profile. An XML record has to be in one of the MDweb profiles. This may lead to a loss of fields that are present in the record but not in the MDweb profile.

    - *Strict* signifies that the record has to fully conform to the selected profile. If this is not so, the import operation will not take place.

    - *Lax* signifies that the fields not corresponding to those expected in the profile will not be included. The import operation will take place but some element values may be lost.

- Click on *Import* 

3.2 Output area

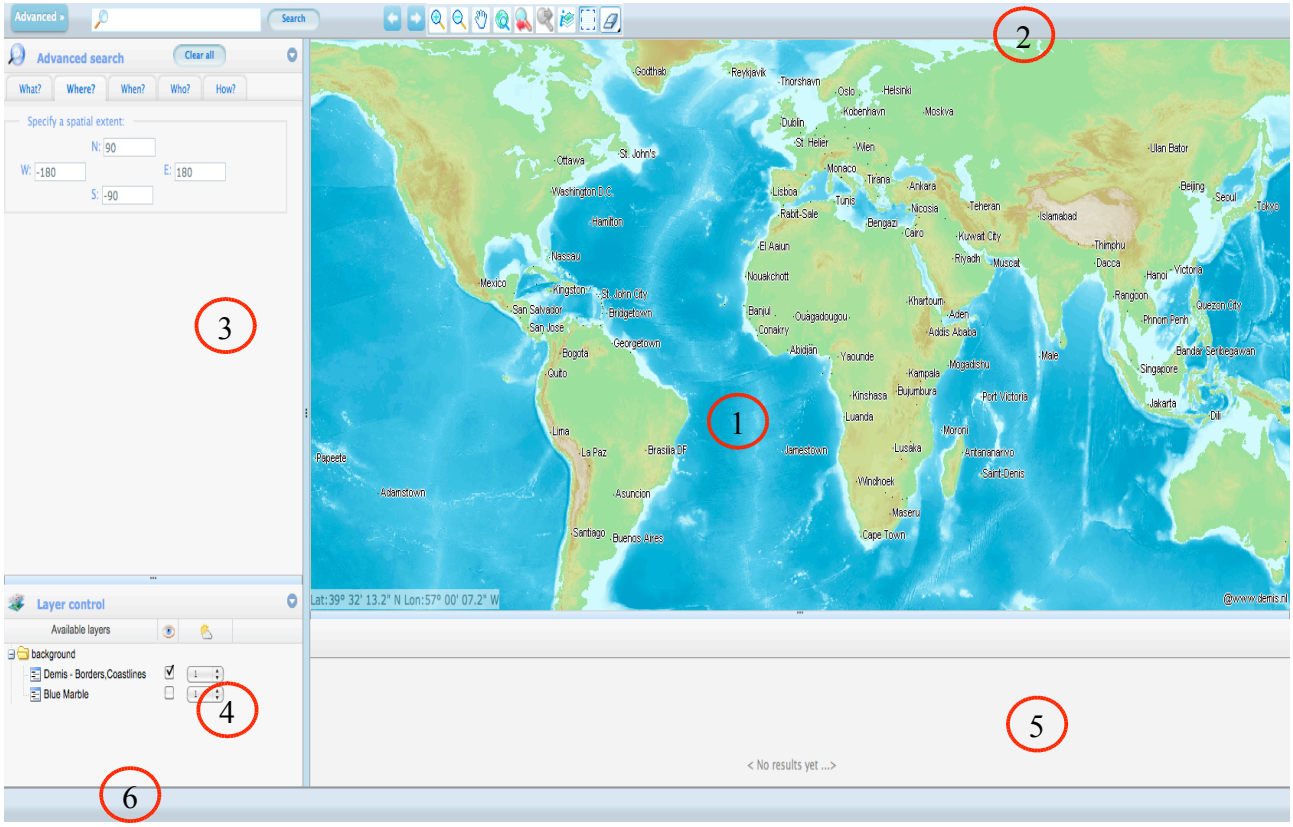
The output screen displays information on the import operation.

Searching

An MDweb user account is not required for metadata searches. The *Search* module is therefore accessible by all. Use it to find spatialized datasets meeting your search criteria.

1 MDweb *Search* interface

The MDweb search interface is divided into 6 areas:

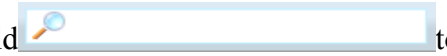


- An upper bar (1) for quick searches.
- An advanced search area (2), collapsible using the button. 
- A cartographic interface (3) for facilitating searches with spatial filters. Search results are also displayed in this area.
- A layer controller (4), for managing the background layers of the cartographic interface. This too is accessible using the button. 
- A lower frame (5) where the summaries of metadata records found after the search are displayed.
- A storage bar (6) for temporarily storing opened metadata records.

2 Quick search

Use the top bar (2) for a quick search.

From left to right, items on the Quick Search bar are:

- The entry field  to enter the keywords to search for.

> MDweb allows the use of Thesaurus Web Services (GEMET, etc.), thus facilitating searches by keyword. In fact, a large number of keywords of metadata records are based on keywords contained in t thesauri.

- The *Search* button  launches the search.
- The *Previous* and *Next* arrow buttons  allow you to skip between results.
- Use these buttons on the bar to control the display of the cartographic interface:
  - Zoom in and out 
  - Pan (hand sign) 
  - Zoom all 
  - Previous/next view 
- Once the results are displayed, select one of the results by clicking on selection icon  then on the corresponding cartographic marker (see section *5 Search results*).
- The search bounding box  allows you to specify the search zone.
  - Click on this icon then use the mouse to draw a rectangular search zone on the cartographic interface.

3 Advanced search

Use MDweb advanced search to refine the search criteria.

The *Advanced* button  on the left side of the search bar allows you to access advanced search options as well as the layer controller.

Advanced search is divided into five tabs:

- What?
- Where?
- When?

- Who?
- How?

Once the search criteria are entered, click on the *Search* button 

on the upper bar to launch the search.

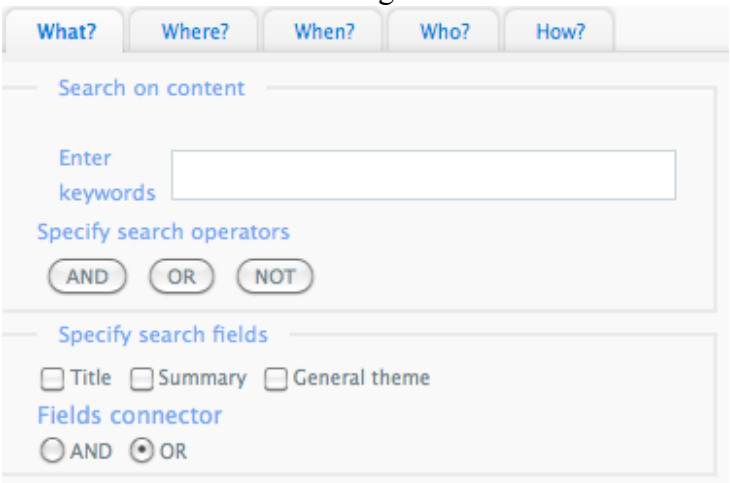
Use the *Clear all* button 

present in the upper part of the Advanced Search screen to clear all search parameters and results of the previous search.

3.1 What?

3.1.1 *What?* tab

Use this tab to specify what to search for. All the criteria you specify in this tab relate to the contents of the data being searched for.



Use the *Enter keywords* text box to type keywords to search for. Three logical operators allow you refine the search:

- *AND* signifies that all the keywords you have entered must be present in the metadata record.
- *OR* signifies that at least one of the keywords you have entered must be present in the metadata record.
- *NOT* signifies that the specified keyword should not be present in the metadata record.

- Use the *Specify search fields* section of the What? tab to select the fields of the metadata record on which the search will take place.
  - *Title*: the search will be limited to words in the titles of records.
  - *Summary*: the search will be limited to words in the record summaries.
  - *General theme*: the search will be limited to keyword terms and those of the *Topic categories* field (ISO 19115 field).
  - Logical operators allow you to combine fields for searches:
    - *AND* signifies that the keyword(s) will have to be

present in all the selected fields.

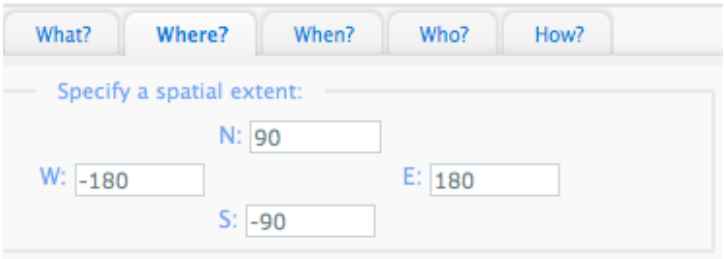
- *OR* signifies that the keyword(s) will have to be present in at least one of the selected fields.

3.1.2 Advanced search syntax

- Commas in the search box are ignored. They are used to separate terms and to restart the autocomplete feature using the thesaurus web service.
- Logical connectors should be typed in capital letters.
- The NOT connector should be used as follows:
  - NOT alone only at the beginning of the entry.
  - After the AND or OR connectors in the middle of a request ('AND NOT' or 'OR NOT').
- The request should not include brackets; the expression should be expanded. Example: '(a AND b) OR c' should be written as 'a OR c AND b OR c'.

3.2 Where?

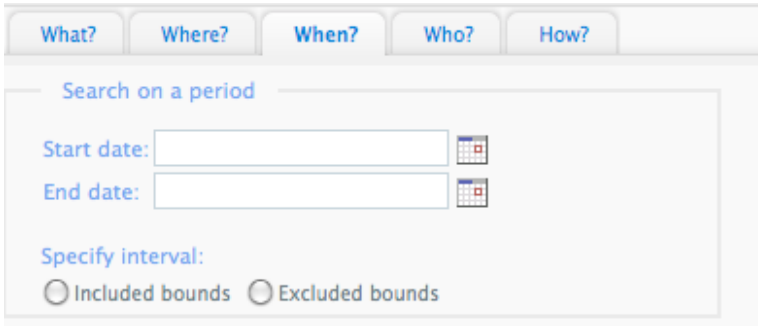
Use this tab to restrict the spatial extent of the datasets to include in the search.



- To specify a spatial extent in the *Where?* tab:
  - Enter the coordinates in decimal degrees (WGS84) of the desired extent in the four fields: W (West), E (East), N (North) and S (South).
  - The coordinates can also be entered automatically by using the bounding box icon in the upper bar. Use the mouse to draw a rectangular search zone on the cartographic interface.

3.3 When?

Use the *When?* tab to restrict the temporal extent of the data being searched for. For this, the dataset's reference date (creation, modification, revision) included in the metadata is used.



• *Search on a period* allows you to specify a period (start date and end date) and only data whose reference date is within that period will be considered for the search.

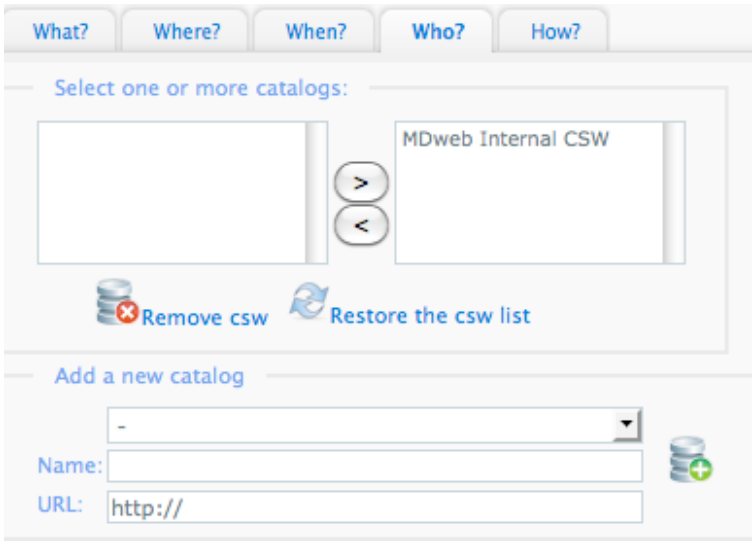
  • Enter two dates directly in the *Start date* and *End date* fields in ISO format (YYYY-MM-DD) or enter them using the calendar icons.

• Use the *Specify interval* section to further refine the search:

  • *Included bounds:* the start date and end dates will both be included in the specified period.

  • *Excluded bounds:* the start date and the end date will be excluded from the specified period.

3.4 Who?



Use the *Who?* tab to specify and add metadata catalogs which will be queried. These catalogs have to be accessible via the OGC web service (CS-W).

• Use the *Select one or more catalogs* section to select the catalogs that will be queried during a search.

  • On the left are the saved catalogs that will not be queried.

- On the right are those that will be queried.

- Move catalogs from one list to another by using the right/left arrows.

- You can remove a catalog altogether by first moving it to the list on the left, selecting it, and then clicking on *Remove csw*.

- You can return to the initial (default) list by clicking on *Restore the catalog list*.

> The list of catalogs available by default can be modified from the *Configure* module (see *Configuration* part, section *5.3 Source Catalog*).

- Use the *Add a new catalog* section to add a catalog to the list of queryable catalogs.

  - MDweb offers several known catalogs in the first drop-down list.

  - *Name* is the catalog name that will be displayed in the catalog list.

  - *URL* is the URL of the CSW service that allows querying of the new catalog.

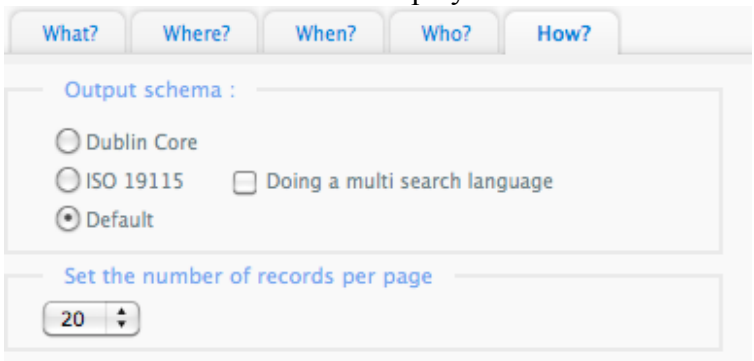
    e.g.: `http://www.fao.org/geonetwork/srv/en/csw`

> Do not include ? or search parameters in the URL.

  - Once these two parameters are entered, click on the *Add* icon.

3.5 How?

Use the *How?* tab to specify the metadata profile to apply for the search, as well as the number of results to be displayed.



• The *Search profile to apply* section allows you to restrict the search to one or more metadata formats.

  • If *Dublin Core* is selected, only those catalogs capable of delivering metadata in Dublin Core format will be included in the search.

  • If *ISO 19115* is selected, only those catalogs capable of delivering metadata in ISO 19115 format will be included in the search.

  • If *Default* is selected, the results will be returned in the native formats of the catalogs. If a catalog is capable of returning results in several formats, MDweb will, by default, give priority in this order: ISO 19115, Dublin Core, other permitted formats.

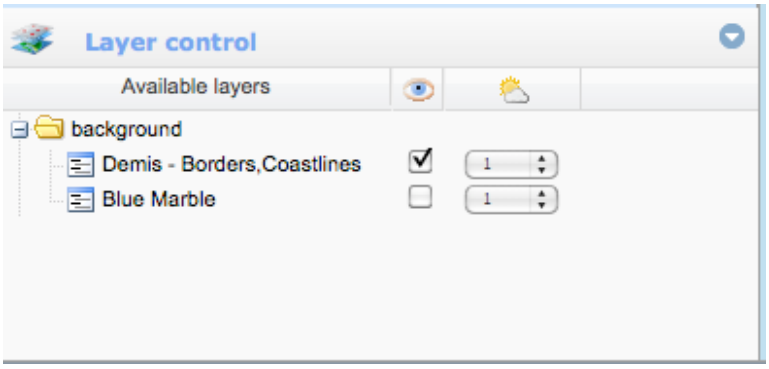
• *Multi-lingual search*: On selection of this option, if the chosen keyword is included in a thesaurus known to MDweb, the keyword will be translated and results returned in any language included in the thesaurus.

• You can also *Set the number of records per page* to display in the search results area or in the cartographic interface.

Note: The greater the number of results to display per page, the longer the search will take.

4 Layer controller

The layer controller manages the display of the cartographic interface by allowing you to choose the layers displayed in the background. You can also customize the cartographic aspect of each catalog's search results.



• Check the box in the layer display column *(eye)* if you want the layer to be visible in the cartographic interface.

- The drop-down list in the opacity column *(cloud and sun)* allows you to control the opacity of the layers.

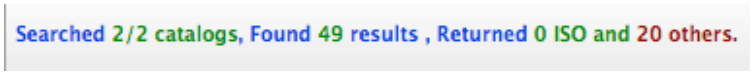
Layers available for displaying in the background are implemented using a Web Map Context XML file (see *Configuration* part, section *4.1 Background Map*).

5 Search results

Search results are displayed on the cartographic interface and the results area just below it.

The ISO format is capable of holding the most information in metadata records. Therefore MDweb displays results in ISO format if multiple formats are available for the displayed record.

- A summary is displayed in the *Quick Search* bar. For example, in the following search result:



  - *for 1/1 catalogs* corresponds to the number of catalogs that responded over the number of catalogs queried.
  - *10 results* corresponds to the number of total results that fulfil the search criteria in the catalogs queried.
  - *9 ISO* indicates the number of records whose display and export format will be ISO 19115.
  - *1 Others* indicates the number of records whose display and export format will be different from ISO (Dublin Core, etc.).

The number of results displayed in the results area and on the cartographic interface correspond to the number of results specified in the *How?* tab of Advanced Search.

- To go back and forth between these results, use the previous/next arrows of the *Quick Search* bar.

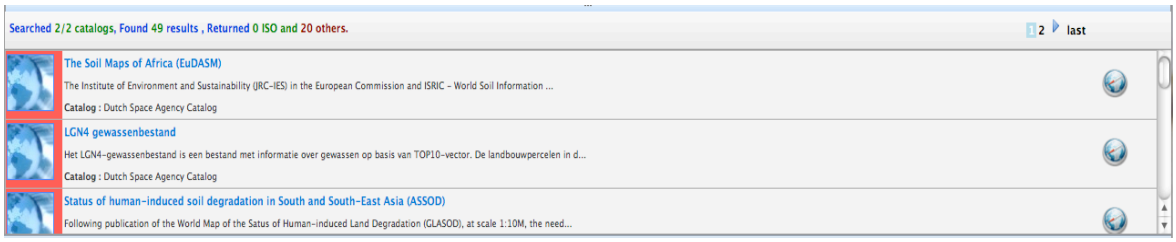
5.1 Results on the map

Search results are displayed on the cartographic interface and can be viewed from there.

- Results are shown on the map as pin markers.
- Click on the marker to access the metadata record.

5.2 Results area

The same results are also shown in the lower part of the search module. Each result is accompanied by a short summary.



- 5 results are shown per page. Use the page-navigation 

icons on the upper edge of this frame to move back and forth between pages.

- On a displayed metadata record:

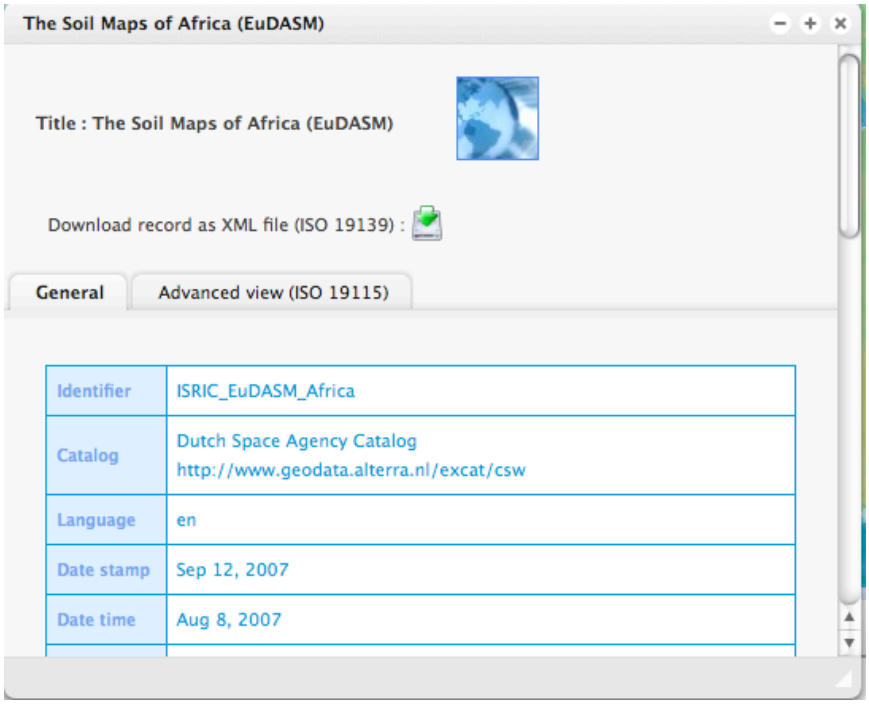
  - Click on the title (displayed in blue) to view the record's information (see section *5.3 Metadata records*, below).

  - Click on the compass icon  to display the spatial extent of the dataset on the cartographic interface.

Display of spatial extent

5.3 Metadata records

Metadata records are displayed in a new window.



- Minimize, maximize or close the window using the window display icons.

If you minimize a window, it goes to the storage bar (6) (see section *6 Record storage bar*).

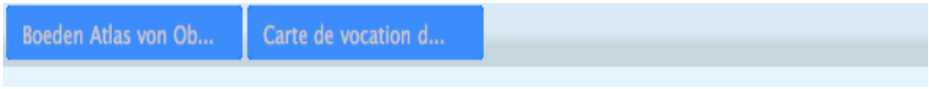
- Use the download icon to download the record in XML format (ISO 19139).

Subsequently, you can import this record into your record sets (see *Editing Metadata* part, section *3 Importing records*).

- The *General* metadata view includes the following information:
    - Record identifier
    - Originating catalog
    - Summary
    - Keywords
    - Spatial extent of the dataset
- The *Advanced view* allows you to browse all the information in the metadata record if it conforms to the ISO 19115 standard.

6 Record storage bar

This storage bar located at the bottom of the screen in the *Search* module allows you to store opened metadata records.



You can thus consult several metadata records at the same time.

Annex A

Constructing the Web Map Context file

1 The Web Map Context specification

The Web Map Context specification allows a background map to be defined for MDweb by using different layers provided by WMS services.

This OGC specification can be found at: http://www.opengeospatial.org/standards/wmc

Xsd schemas can be downloaded from: http://schemas.opengis.net/context/

MDweb uses version 0.3 of this specification; some differences exist between that version and the current version (1.1.0) of the specification. 

2 The Context.xml file

It is the information contained in the contact.xml file which will be interpreted by MDweb to display the background map selected by the user.

This file's structure is as follows:

- A root element <OWScontext> that the user should not modify.
- Two child elements:
  - The <General> element which contains information independent of the layers used in the context file.
  - The <ResourceList> element which contains and describes layer styles used in the context.

2.1.1 The <General> element

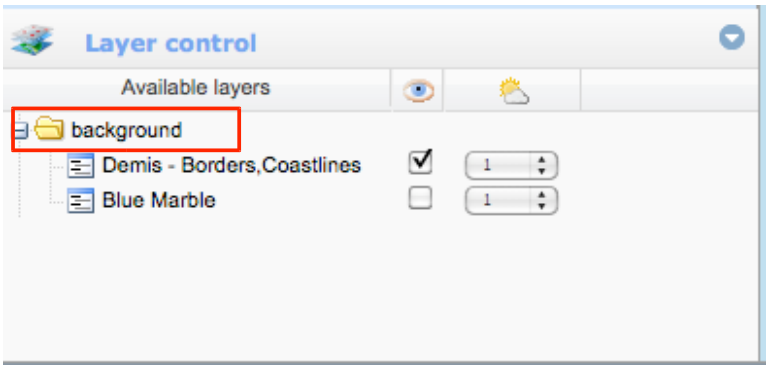
Among child elements of <General>:

- The <BoundingBox> element allows the maximum spatial extent of the search zone to be defined. The coordinates have to be expressed in CRS84, with the point used as decimal separator. LowerCorner corresponds to the East and South coordinates, UpperCorner to West and North coordinates.
- <Title> corresponds to the title you want to give to the Context, and <Abstract> is a summary of your Context file.

2.1.2 The <ResourceList> element

The <ResourceList> element is a list of different <Layer> elements which describe the layers used in the Context. The <Layer> element can be broken down as follows:

- <Layer> properties:
  - *Group* allows grouping of layers and thus an hierarchy at the MDweb layer controller level. For example, the 'background' group, below, constitutes the background of the cartographic interface.



  - *Queryable* is required but does not concern MDweb so you can leave it at 0 by default.
  - *Hidden* with value 1 signifies that the layer will, by default, not appear in the cartographic interface. It will show as unchecked in the layer controller.
  - <ows:Title> corresponds to the title of the layer in the MDweb layer controller.
  - <ows:OutputFormat> corresponds to the output format of the queried service.
  - <Server> allows web WMS services to be managed as well as layers which will be called from these servers.
    - You have to specify the version of the WMS service called (version), as well as its url (href= '')

The construction of the URL depends on the requested service. You have to at least specify the layer called.

Annex B

Bibliographical references of proposed metadata profiles

1 ISO 19115

The ISO 19115 standard describes the conceptual metadata model used for creating metadata relating to spatial data.

Reference:

ISO TC 211 site: http://www.isotc211.org/

2 ISO 19139

The ISO 19139 standard describes an XML encoding format meant for spatialized metadata. It is the technical counterpart to the ISO 19115 standard.

Reference:

ISO TC 211 site: http://www.isotc211.org/

3 INSPIRE

The INSPIRE profiles are metadata profiles that conform to the INSPIRE European directive. It is a specialization of the ISO 19115 standard. It follows XML encoding specified by the ISO 19139 standard.

Reference:

INSPIRE site: http://inspire.jrc.ec.europa.eu/

4 ISO 19115 Fra

The ISO 19115 Fra profiles are profiles that are French specializations of the ISO 19115 standard. Their encoding conforms to the ISO 19139 standard and they include new classes while respecting the ISO 19106 standard for extending profiles from the ISO 19115 standard.

Reference:

Eden site: http://eden.ign.fr/xsd/fra

5 NatureSDI Plus

The NatureSDI Plus profiles were created from a specialization of the INSPIRE directive and the ISO 19115 standard for the specific requirements of the nature-conservation community following the European NatureSDI Plus project.

They consist of the ‘Protected Sites’ profile of INSPIRE Annex I and three experimental profiles for Annexes III: ‘Biogeographical Regions’, ‘Species Distribution’ and ‘Habitats and Biotopes’.

Reference:

Nature SDI Plus site: http://www.nature-sdi.eu/

French portal:

6 Dublin Core

Dublin Core is a metadata format independent of the ISO 19115 conceptual standard. There also exists an XML encoding (non-ISO 19139).

This format is lighter: it consists of 22 core fields and allows rapid cataloging of all types of resources but with reduced information.

Reference:

Dublin Core site: http://dublincore.org/

Annex C

Which profile to use for what metadata?

This annex tries to help a user choose a profile, from those available in MDweb, for creating metadata records that is most appropriate to the resource he or she wants to catalog.

1 The ISO 19115 profiles

These profiles are specializations of the ISO 19115 conceptual standard and are suitable for different types of resources to be cataloged.

Type of resource	Definition	Examples of some known formats	MDweb profile
Digital document	Unofficial document, unpublished text	Digital format Text, illustration: Doc, ppt, xls, od*, pdf	ISO19115:doc_text_num
Paper document	Book, official document, official report	Paper document or digital equivalent (pdf, etc.)	ISO19115:refer_biblio
Digital map	Digital map (with formatting, a legend, a scale, symbology, etc.)	mxd+ (esri), WOR+ (mapinfo), mapset (grass), QGIS, JUMP, GvSIG, ORBISGIS, etc.	ISO19115:carte_num
Paper map	Old maps, treasure maps, etc.	Paper document or digital copy	ISO19115:carte_papier
Data table, spreadsheet	Raw data (If some coherence exists between several sets of raw data, the whole can be converted into a database)	Database table, csv, tab, odt/xls worksheet	ISO19115:table_num
Database	Relational database without geographical dimension (Several xls tables having some coherence form a database)	Database without the spatial dimension, xls workbook	ISO19115:base_alpha

Geographical database	Structured spatial data (having a referenced coordinate system) Geographical databases	An ESRI geodatabase, a GRASS mapset Database postgis, oracle spatial, mysql spatial	ISO19115:base_geo
Raster layer	Once the raw data is processed, analysed	Mosaic … Analytic raster ndvi	ISO19115:couche_raster
Vector layer	Vector layer	Shp, mif/Mid, dwg	ISO19115:couche_vecteur

All resource types cannot be cataloged with the available ISO profiles. As new requirements arise, new profiles will be made available.

If your resource type cannot be described by an ISO profile, you may want to look at the Dublin Core profile.

2 The Dublin Core profile

The Dublin Core profile offered in this version is a generic profile that should allow a minimal cataloging of any resource. If a profile is missing in ISO, the resource can be cataloged in Dublin Core.

Future versions of MDweb will break down the Dublin Core standard into several profiles.

3 The INSPIRE profiles

The INSPIRE profiles correspond to three core profiles (dataset, series and service) specified by the directive in this document: ***INSPIRE Metadata Implementing Rules: Technical Guidelines based on EN ISO 19115 and EN ISO 19119***. Specialized profiles for raster or vector data are offered at the dataset level.

These 4 profiles conform to the INSPIRE directive. They represent the core INSPIRE metadata. Supplementary metadata applying specifically to each INSPIRE Annex are not included.

4 The ISO French profiles

These profiles are about to undergo changes and it is not recommended to use these profiles just yet.

5 The NatureSDI profiles

The NatureSDI Plus profiles are profiles originating from the NatureSDI European project and the implementation of the metadata specifications: **NatureSDI-Plus Metadata Specification.**

The ‘Protected Sites’ profile allows INSPIRE-conforming cataloging of resources specific to Annex 1, ‘Protected Sites’.

The three other profiles (‘Biogeographical Regions’, ‘Habitats and Biotopes’ and ‘Species Distribution’) are base profiles for creating metadata profiles for INSPIRE Annex 3: Biogeographical Regions, Habitats and Biotopes, and Species Distribution.

These three profiles conform to the core INSPIRE metadata. Note, however, that extended elements are subject to change in the period leading up to the official publication of the mentioned Annex 3 resource types.

Annex D

Roles and Rights in the Edit module

This Annex describes the process of editing metadata records and the usage of different user roles and record sets.

1 Creation and management of record sets

Only an administrator can create record sets.

Different types of record sets

Record sets can be divided into two broad types: internal and external.

- External sets are sets whose records, once validated and published, will be visible and accessible via the web by way of a cataloging web service. These sets therefore contain records which we want to distribute and make available via the web.
- Internal sets are sets whose records are not accessible via the web and the MDweb search module. There are two distinct usages for an internal set:
  - To create a set containing confidential metadata which will only be accessible by authenticated MDweb users.
  - To create sets of metadata record templates. These templates can serve as a basis for authors of metadata records but there is no reason to make them publicly available.

Creation of different record sets

The number and structuring of different record sets depends on the MDweb usage context.

For example, a structure consisting of data on two different broad themes (flora and fauna) could have two record sets, each corresponding to one of the two themes.

2 Creation and management of record templates

Record templates are records that are partially filled-in. Only an administrator or an editor can create templates that are available to all the users (‘Shared’ templates).

Other authors can only create their own templates, which they will not be able to share with other users.

3 Creation and management of records

Once a user creates a record, he or she becomes its owner. Only an editor or an administrator can modify a record belonging to another user and can even change the owner of a record or move the record to a different record set.

Other authenticated users will see all existing records but will not be able to modify their properties.

Authors and validators can create a new record from an existing record. Commentators, on the other hand, can only attach comments to records.

4 Validation of records

Only validators, editors and administrators can validate a record.

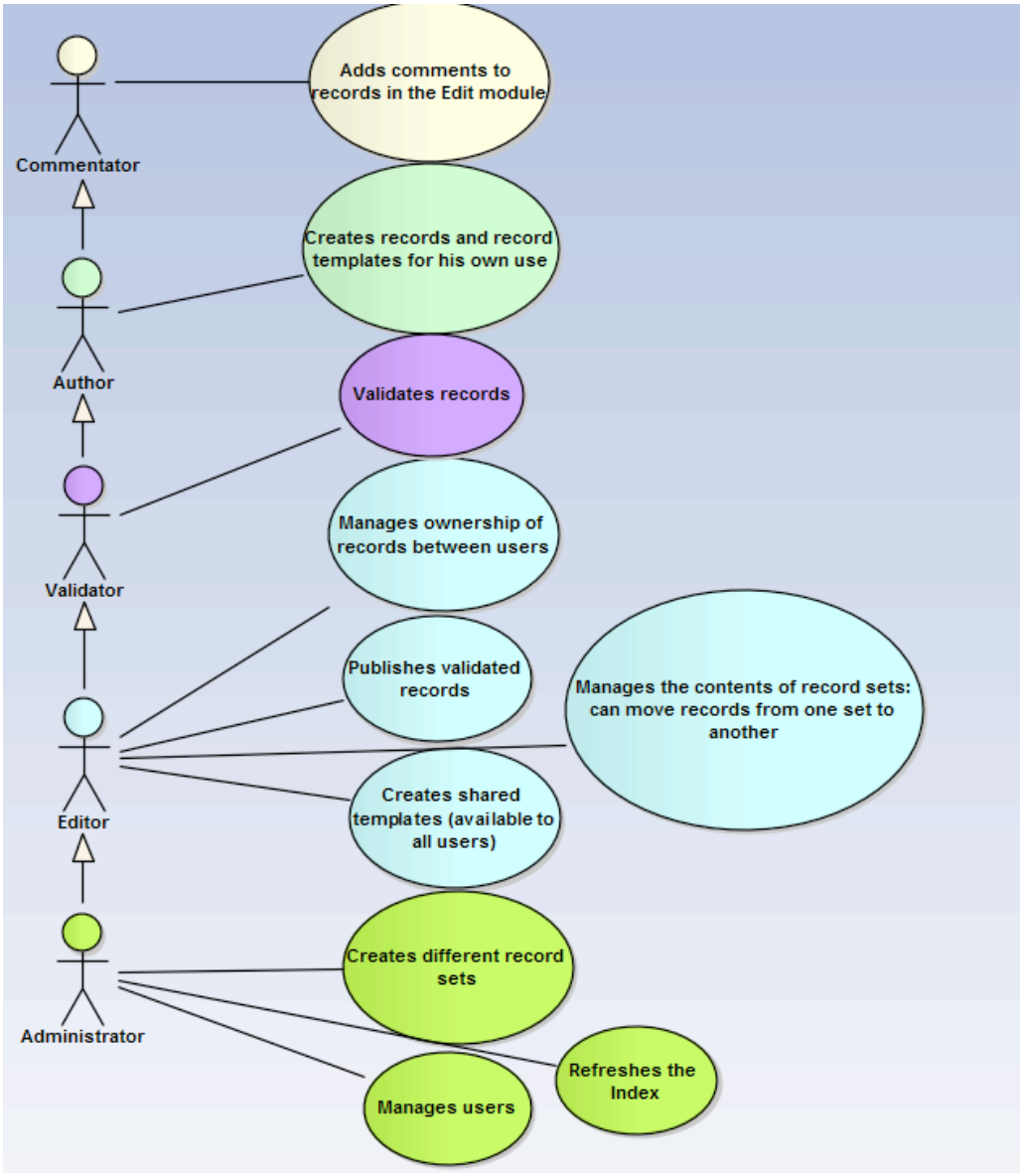
5 Publication of records

Only editors and administrators can publish a record from the *Edit* module.

However, the cataloging web service is based on an index for distributing these records and it is necessary to update this index for the publication to take effect. The MDweb index can only be refreshed from the *Administration* module to which only an administrator has access, the editor does not.

Therefore, for a record to be finally published, an administrator's intervention is obligatory.

Use case: Editing and publication of records



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